

REMARKS/ARGUMENTS

Reconsideration of the Application in view of the above amendments and the following remarks is respectfully requested.

The Examiner objects to the drawings under 37 C.F.R. 1.83(a) in that the drawings must show every feature of the invention specified in the claims. The Examiner states that therefore that the m output signals must be shown on the features canceled from the claims. The Examiner notes that m in the original application is associated with the LCD driver ICs from 1 to m. The Examiner requires a proposed drawing correction in reply to this Official Action.

In order to avoid confusion between the number of output signals and the number of integrated circuits, Applicants have amended Claim 11 by replacing "m" with --l--. In addition, Applicants have amended Figure 4A by labeling some of the unlabeled outputs from the integrated circuit 100-m-1 as 1, 2, 3...l-2, l-1 and l_j. Thus conforming with the recitation in Claim 11. In view of the fact that these outputs existed in Figure 4A, as filed, and all Applicants did was label them in conformance with Claim 11, no new matter has been entered.

The Examiner rejects Claims 16-17 and 19 under U.S.C. § 112, second paragraph as being indefinite for failing for particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Examiner states that these claims are dependent upon now canceled Claim 12. The dependence of these claims has been corrected.

The Examiner rejects Claims 11 and 22 under U.S.C. § 103(a) as being unpatentable over Cha et al. The Examiner states that Cha et al teaches a module for a display device comprising a wiring substrate having a single level of wiring and specifically refers to Figures 3 and 5 and the description thereof. The Examiner states

that each of the integrated circuits have inputs arranged linearly in a row along a first side and an output on a second side parallel to the first side in which wiring connected to the end input terminals are parallel lines being divided by separating slots and specifically refers to Figures 7-10 items 50 and 35.

We cannot agree. Cha et al does not show any of the wiring patterns on the flexible printed circuit 60. The recitation that the segments including gate drive portion 61, source drive portion 62 and connector portion 63 form a single layer refers to a single layer of plastic used to form the flexible circuit board. There is no recitation that there is a single layer of wiring on the flexible printed circuit. In fact, when wiring could be shown, these are omitted, see for example, col. 5, lines 20-21 which recite in pertinent part "Pads (not shown) for connecting gate and the data line..." (emphasis added). The fact that connector portion 94 may have fingers 96 for connecting to connector 106, is not dispositive as to the way the signal lines are distributed to the plurality of chips that drive the LCD. This arrangement is not at all incompatible with the arrangement shown in our Figure 7, which is admittedly prior art. Thus, the Examiner's interpretation that the "single layer" pertains to a single layer of wiring is only in impermissible in hindsight after reading Applicant's disclosure.

The Examiner admits that Cha et al does not teach switching circuit generating n output signals coupled to a drive signal generation circuit for driving the display device, the switching circuit sequentially connecting first through n th input terminals to first through n th output terminals respectively on a control signal as on a first logic level and sequentially connects first through n th input terminals to first through n th output terminals respectively when a control signal is at the second logic level. The Examiner states that Mical et al teaches a cross-over unit which can place appropriate even or odd-numbered pixel signals on respective side buses. The Examiner states that it would have been obvious to one of ordinary skill in the art at the time of the invention to

implement Mical et al. approach in the Cha et al. apparatus in order to avoid the need of a row buffer.

We cannot agree. Mical et al is from a completely unrelated art and the Examiner has not provided any reason why someone would take a circuit from unrelated art and apply to the present invention. Nor has the Examiner shown why this would result in a structure which avoids a need for multi-level wiring, as in the present invention. This is neither shown or suggested by Mical et al or Cha et al, either singularly or in combination. Applicant also repeats the discussion of Mical et al found in Applicant's previous response mailed on August 21, 2003.

The Examiner admits that as to Claim 22, Mical et al and Cha et al do not show control signals coupled to a plurality of integrated circuits at a first logic level form one integrated circuit of a pair of integrated circuits and a second logic level for another integrated circuit of a pair. The Examiner states that since even and odd drivers connected in series and the Examiner then refers to Figure 9, col. 1-128 in the description in col. 10, lines 54-62 (of Cha et al?), it would have been obvious to one of ordinary skill in the art at the time the invention to use the first logic level for one integrated circuit of a pair and a second logic level for another integrated circuit of a pair in Cha et al and Mical et al apparatus in order to provide a slim lightweight LCD module with less number of manufacturing processes.

This rejection is respectfully traversed. Mical et al does not relate to an LCD system and therefore do not suggest to one skilled in the art that it could be utilized in a module for a LCD display in order to avoid multi-level wiring as in the present invention. Nothing in Mical et al would suggest anything with regard to a LCD module, because this reference is from an entirely different art, the Examiner's statements to the contrary notwithstanding.

The Examiner rejects Claims 13 and 24 under U.S.C. § 103(a) as being unpatentable over Cha et al and Mical et al as in Claims 11 and 22 and further in view

of Voisin et al. The Examiner states that Voisin et al teaches a flexible substrate. These claims are dependent from Claim 11 or Claim 22. The patentability of these Claims 11 and 22 have been shown above, these claims are patentable for the same reasons.

The Examiner states that Claims 14-15, 18, 20-21 and 25-26 are objected to as being dependent upon or rejected base claim, but would be allowable if rewritten in independent form including all the limitation of the base claim and any intervening claims. Accordingly, Applicants have amended Claims 14, 15 and 18 to be in independent form including all the limitations of the base claim and any intervening claim, if any.

According, Applicants believe the Application, as amended, is in condition for allowance, and such action is respectfully requested.

Respectfully submitted,

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4B ← FIG. 4A

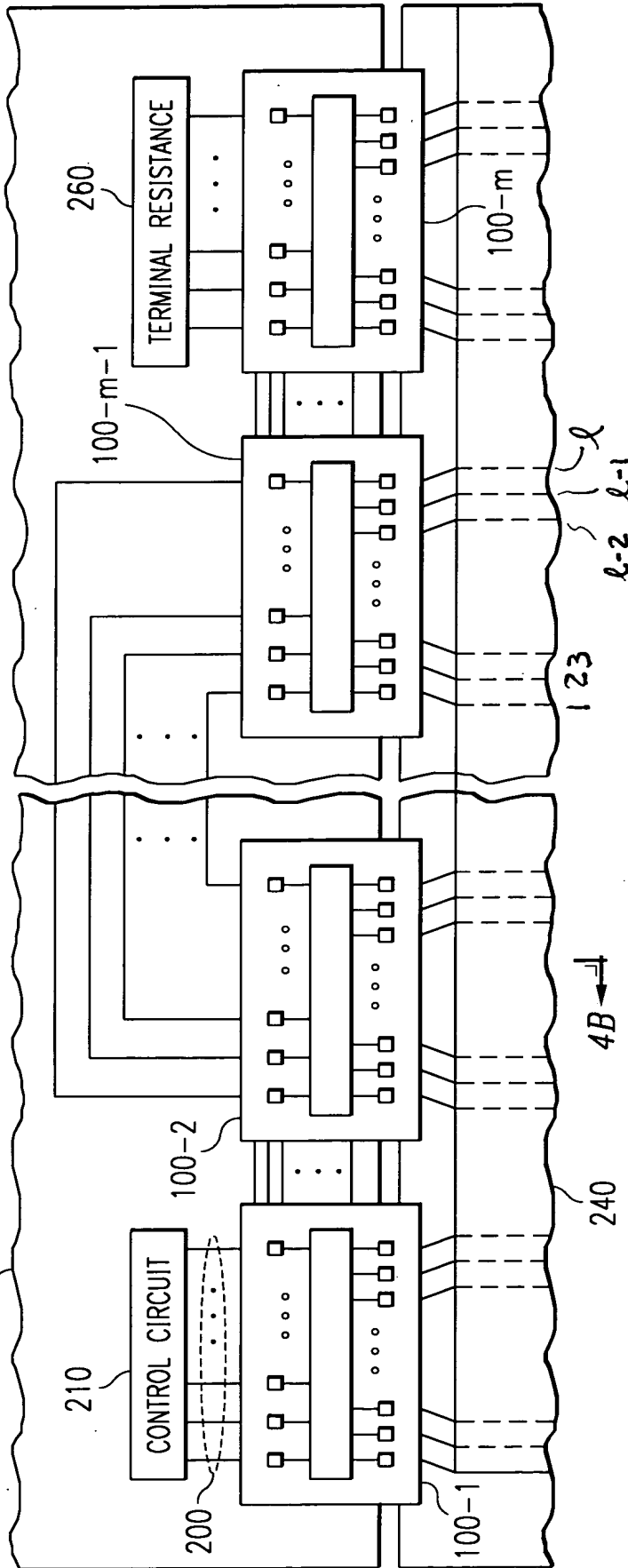


FIG. 4B 100-i (i=1,2,...m)

